Who Cares about Sustainability?

a) Bill Gates (Microsoft)

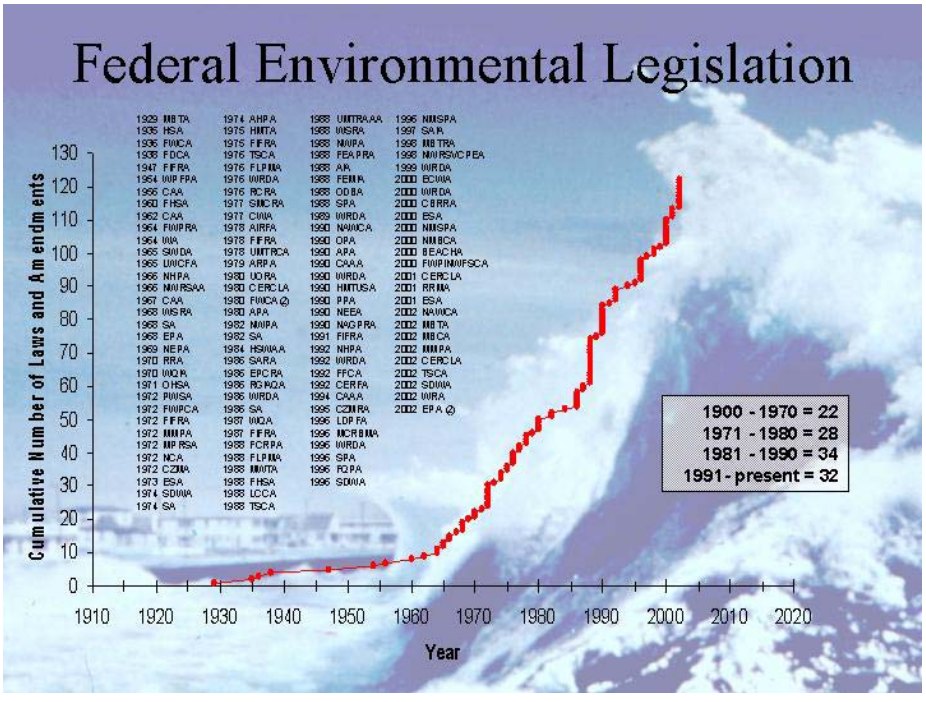
b) COL Hoefert/Doug Warnock (ODEP)

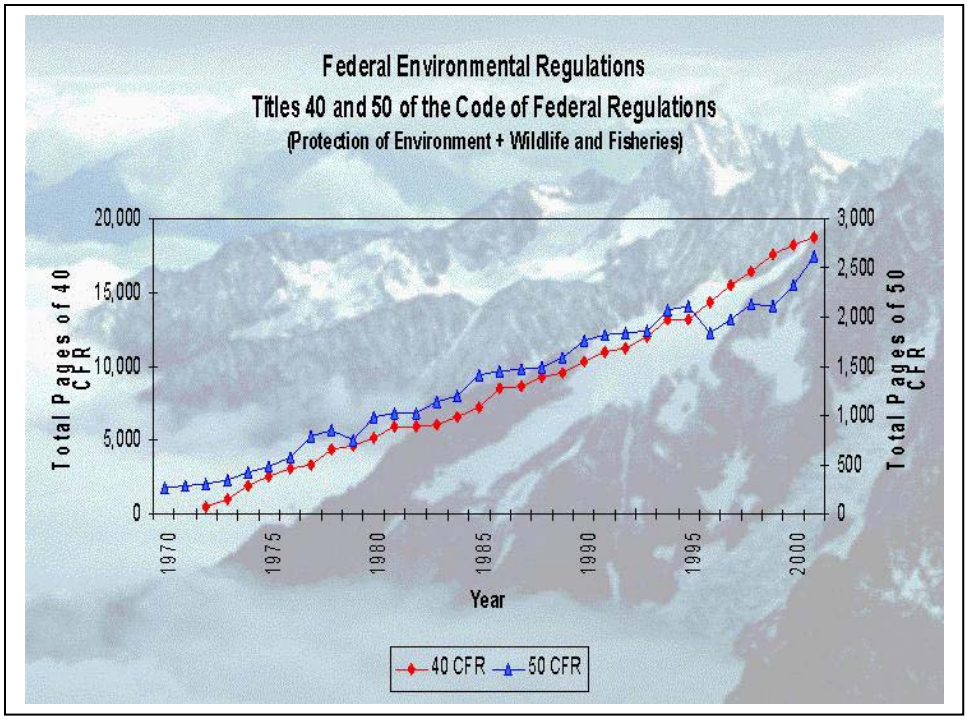
c) William Clay Ford Jr. (Ford Motor Co.)

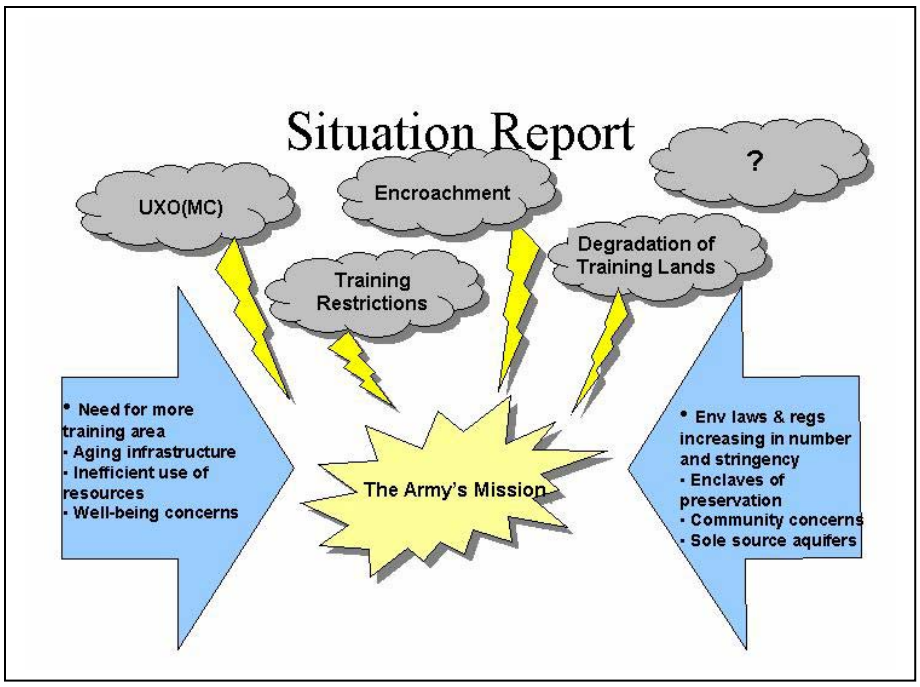
d) Leadership @ Army Environmental Ctr.

e) Pope John Paul II

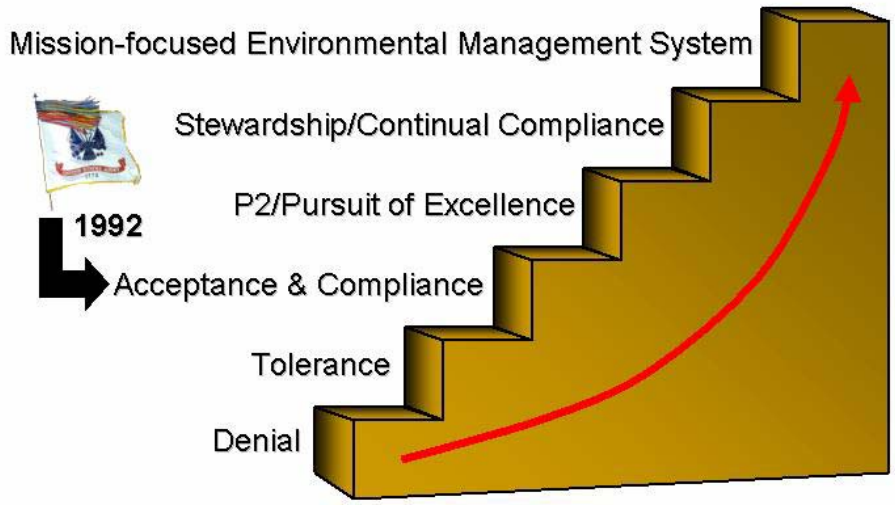
f) ACSIM Functional Project Level Personnel




Federal Environmental Regulations
Titles 40 and 50 of the Code of Federal Regulations
(Protection of Environment + Wildlife and Fisheries)
Total Pages of 40 CFR
Total Pages of 50 CFR
20,000
15,000
10,000
5,000
0
3,000
2,500
2,000
1,500
1,000
500
0
1970
1975
1980
1985
1990
1995
2000
Year
40 CFR
50 CFR

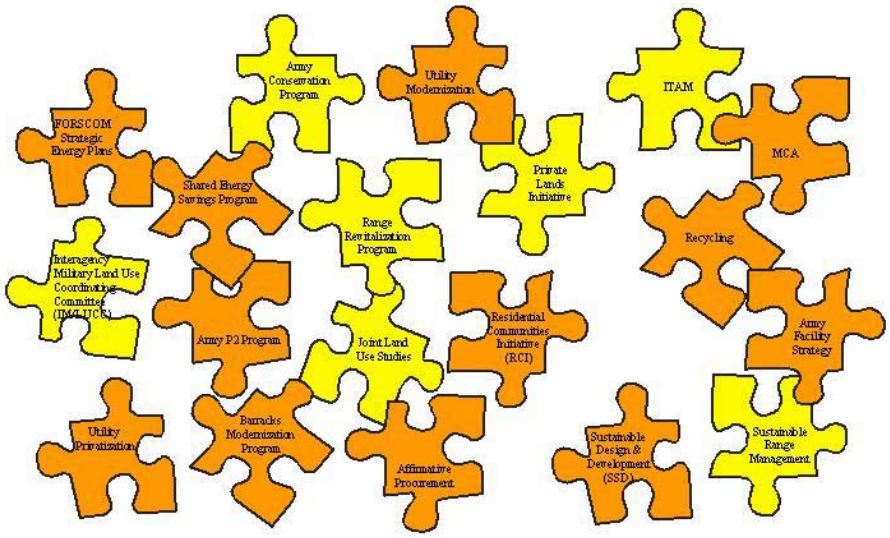

Situation Report
UXO(MC)
Encroachment
?
Degradation of Training Lands
Training Restrictions
• Need for more training area
• Aging infrastructure
• Inefficient use of resources
• Well-being concerns
The Army's Mission
• Env laws & regs increasing in number and stringency
• Enclaves of preservation
• Community concerns
• Sole source aquifers

Evolution of Environmental Management

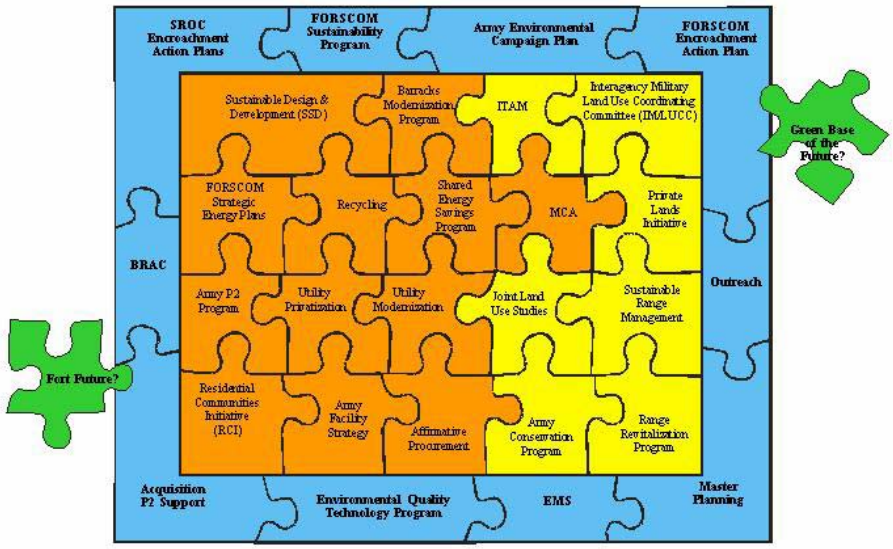


Adapted from ALCOA Presentation, "Our Story," Pentagon, March 2001

Sustainability: Journey Begun



Sustainability: "A more comprehensive, creative, and integrated approach to addressing environmental problems with a long term perspective and improved teamwork" Ed Engbert's KISS Def'n.



Definitions

Sustainability is …

"Meeting the needs of the present without compromising the ability of future generations to meet their own needs"

- Brundtland Commission

"An approach to ensure the long-term viability and integrity of the mission by minimizing resource needs, reducing environmental impacts, and managing resources as to provide realistic training environments"

- Fort Bragg working definition

More Def'n(s)

Sustainment is …

"People, skills, capability, and things are maintained to the standard set for mission accomplishment by replacement, rotation, repair and training operations."

- How The Army Works, US Army War College

Installation sustainability is…

"An approach to ensure the long-term viability of the mission by minimizing resource needs, reducing environmental impacts, and managing resources so as to provide realistic training environments."

- Fort Bragg working definition

Connecting the two…

Sustaining an operation/installation sustainability happens when resources are consumed no faster than they can be replenished

Old/Existing Paradigm (by Ray Anderson)

- The Earth is an inexhaustible source of materials. We'll never run out. There will always be substitutes available.
- Earth is a limitless sink, able to assimilate our waste, no matter how poisonous, no matter how much.
- Relevant time frames are, maximum, the life of a human being; more likely, the working life of a human being; sometimes, especially in business, just the next quarter.
- Earth was made for humans to conquer and rule; homo-sapiens apiens (self named 'wise man') doesn't really need other species, except for food, fiber, and fuel, and maybe shade
- Technology is omnipotent, especially when coupled with human intelligence, specifically for left brained intelligence
- Adam Smith's invisible hand of commerce is an "honest broker"

New/Future Paradigm (by Ray Anderson)

- Earth is finite (see it from space; that's all there is!) both as a source (what it can provide) and as a sink (what it can assimilate and endure)
- There will come a time and end to the substitutes that are possible. You can not substitute water for food, air for water, food for warmth, energy for air, air for food. Some things are complimentary.
- Relevant time frames are geologic in scale. We must, at least, think beyond ourselves and our brief, puny time on Earth – so brief – and think of our species, not just ourselves, over geologic time.
- Man was made for Earth, not the other way around, and the diversity of nature is crucially important in keeping the whole web of life, including us, sustainably over geologic time.
- Technology must fundamentally change if it is to become part of the solution instead of continuing to be the major part of the problem. T1 must change to T2 and T must move from numerator to denomiator.
- The right side of the brain, the caring, nurturing, artistic, subjective, sensitive, emotional side (in business, the soft side) is at least as important as the left side, perhaps a good bit more important since it represents the human spirit
- The market is "opportunistic", if not outright dishonest, in its willingness to externalize any cost that an unwary, uncaring public will allow it to externalize. It must constantly be redressed to keep it honest. Does the price of a pack of cigarettes reflect it cost? A barrel of oil?

Example of Understanding Natural Law

Basketball is defined by the "first-order" principles of the "game system" -- or the rules and objectives of the game -- and not by various *exercises*, *strategies* or *skills* employed to become a *good* player.

To become a *good* player the starting point is to learn about the rules and objectives.

All the strategies and skills are elaborated, or ordered, as consequences of these "first-order" principles.

FOUR PRINCIPLES OF SUSTAINABILITY

In order for society to be sustainable, nature's functions and diversity are not systematically……..

1) … subject to increasing concentrations of substances extracted from the Earth's crust. (Oil and Coal)
2) … subject to increasing concentrations of substances produced by society; (Solvents, POL)
3) … impoverished by over exhausting or other forms of ecosystem manipulation, (Water and wind erosion), and
4) … resources are used fairly and efficiently in order to meet basic human needs worldwide.

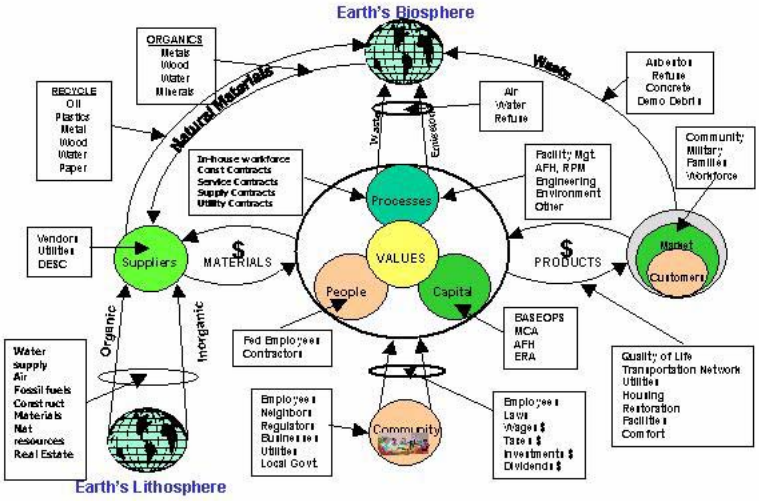
Ecological Footprint

The Ecological Footprint of any individual is the sum of several separate components:

- Growing crops,
- Grazing animals,
- Harvested timber
- Catching fish and productive marine products,
- Accommodating infrastructure
- Burning fossil fuel

The Ecological Footprint is measured in "area units". One area unit is the equivalent of one hectare of world average productivity.

SYSTEM MAP



Material Flows

In cyclical natural systems, waste does not exist.

Waste = Food.

Linear Industrial Processes: Waste is created faster than it can be reconstituted to quality resources. **Take-make-waste**

Raw Materials → Manufacturing Process → **6% Product**

Manufacturing Process → **94% Waste**

80% of products discarded after single use

It is estimated that 99% of the original materials used in the production of, or contained in, the goods made in the US become waste within 6 weeks of sale. (Attributed to Paul Hawken, *Factor 4*, 1997)

Typical Challenges

Demolition/Burial:

- **Current method,**
- **Quickest,**
- **Easiest**

Deconstruction/Material Reuse:

- **New *and* Old Method,**
- **Longer time requirement,**
- **Harder to coordinate (risky).**

ELECTRONIC WASTE CHALLENGES

Who's Responsibility is it to reinvent environmental stewardship?

- Designer
- Manufacturer
- Distributor
- Retailer
- Consumer
- Government policy/fiscal managers
- Disposal Agencies

Examples of Hood/Bragg/Lewis Goals

Hood	Bragg	Lewis
Reduce potable water consumption by 45% (to 55gal/capita/day) and ensure water quality leaving FT Hood meets "Clean Texas Leader" Standards.	*Water Resources* Reduce amount of water taken from Little River by 70% by 2025, from current withdrawals of 8.5 million gallons per day. Ensure that water quality leaving the Fort is equal to or better than water coming on post by 2025.	Zero discharge of wastewaters and aquifers cleaned by 2025. Water consumption reduced by 75% by 2025. Regional water management program by 2012
FT Hood leads regional commitment to sustainability culture in Central Texas.	*Command Information & Education* Develop an integrated environmental education program for Ft. Bragg, its surrounding communities, and interested parties	

What will success look like?

- Fewer training restrictions
- Lower life-cycle costs, including O&M
- Enhanced well-being for soldiers, their families, and neighboring communities
- Fewer regulated activities and less potential for enforcement actions/fines
- Enhanced productivity
- Real partnerships with communities to achieve common goals

Wrap Up

- Sustainability is the next step (or several steps) in the evolution of environmental protection
- It is a way to unify our efforts to accomplish a better environment and to support the mission
- The heavy lifting comes in better weaving our programs together and improving integration of environmental considerations into the mission